

### **REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed March 20, 2007 (Paper No./Mail Date 20070317). Upon entry of this response, claims 2-27 are pending in the application. In this response, claims 2-3, 6, 10-16, and 18-21 have been amended, claims 22-27 have been added, and claim 17 has been cancelled. Applicants respectfully request that the amendments being filed herewith be entered and request that there be reconsideration of all pending claims.

#### **1. Specification Objections**

The specification has been objected to because of the following informality: In paragraph [0001], the Applicants are requested to update the U.S. Application No. 09/102,176, now U.S. Patent No. 6,647,058. The specification has been amended in accordance with the Examiner's recommendations and Applicants respectfully request that the objection be withdrawn.

#### **2. Claim Objections**

Claims 14-21 have been objected to because of the following informalities:

- (a) In line 1 of each of claims 14-21, it is better to change the term "modem receiver" to "receiving modem";
- (b) In claim 14 (lines 2 and 5), claim 17 (line 2), and claim 21 (line 2), it is better to change the term "DSL modem" to "DSL transmitting modem"; and
- (c) In claim 17, line 3 (both occurrences), "step" should be "means".

In response to the objection, Applicants have canceled claim 17 and amended claims 14-16 and 18-21. In view of these claim amendments, Applicants respectfully submit that the claims are not objectionable and respectfully request that the objection be withdrawn.

### **3. Rejection of Claims 2-13 under 35 U.S.C. §112, first paragraph**

Claims 2-13 have been rejected under §112, first paragraph, as allegedly failing to comply with the enablement requirement. Specifically, the Office Action alleges that “the communication of “from a DSL modem” or “with a DSL modem” was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.” (Office Action, page 3, paragraph 2).

Applicants respectfully disagree and submit that support for the above limitation is found in paragraph [0031], on page 7, of the specification. “The test for sufficiency of support in a parent application is whether the disclosure of the application relied upon reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563, 19 USPQ2d 1111, 1116 (Fed. Cir. 1991). Although the specific phrase “a DSL modem” is not found in the specification, a person of ordinary skill in the art would understand that a DSL modem could comprise both transmitting and receiving in order to operate in a duplex environment. Thus, Applicants submit that paragraph [0031], on combination with FIGS. 2-4 of the specification, is sufficient to inform one of ordinary skill in the art that Applicants had possession of the claimed invention. Therefore, Applicants request that this rejection of claims 2-13 be withdrawn.

### **4. Rejection of Claims 2, 6-8, 11, and 13 under 35 U.S.C. §112, second paragraph**

Claims 2, 6-8, 11, and 13 have been rejected under §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Office Action alleges that:

(a) In claim 3, line 2, is the term “a DSL modem” different than “a DSL modem” from line 3 of claim 2?

(b) In claim 6 (line 2) and claim 11 (line 2), the terms “with the DSL modem” and “with DSL modem transmitter” [*sic*] both lack antecedent basis.

(c) In claim 13, line 2, the term “a secondary channel” is indefinite since the precedent claims 1-2 do not include a primary channel.

In response to the rejection, Applicants have amended claims 3, 6, 11, and 13. In view of these amendments, it is respectfully asserted that claims 2, 6-8, 11, and 13 define the invention in the manner required by 35 U.S.C. § 112. Accordingly, Applicants respectfully request that the rejections to these claims be withdrawn.

#### **5. Rejection of Claims 2-21 under 35 U.S.C. §102**

Claims 2-21 have been rejected under §102(b) as allegedly being anticipated by *Goldstein* (U.S. Patent No. 5,265,151), hereafter *Goldstein*. Applicants respectfully traverse these rejections.

It is axiomatic that “[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.” *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983). Therefore, every claimed feature of the claimed invention must be represented in the applied reference to constitute a proper rejection under 35 U.S.C. § 102(e).

In the present case, not every feature of the claimed invention is represented in the *Goldstein* reference. Applicants discuss the *Goldstein* disclosure and Applicants’ claims in the following.

**a. Claims 2-13**

Applicants' amended independent claim 2 provides as follows (emphasis added):

A method of adjusting transmit performance parameters over a digital subscriber line (DSL) comprising the steps of:

***negotiating, with a DSL modem, a value for a first performance parameter,***  
receiving, from the DSL modem, a signal exhibiting the first performance parameter;  
determining a signal-to-noise-ratio for the received signal; and  
requesting, from the DSL modem, an adjustment in a second performance parameter associated with the received signal, wherein the second performance parameter is different from the first performance parameter.

Applicants respectfully request that the rejection of independent claim 2 be withdrawn for at least the reason that *Goldstein* fails to disclose, teach, or suggest at least the features recited and emphasized above in claim 2.

The Office Action alleges that "Goldstein discloses modems 1 and 2 in Fig. 1, each modem comprises a transmitter modem 34a or 34b for transmitting a transmission power (first parameter) to a receiving modem 38a or 38b for receiving the transmission power, determining a signal/noise ration [*sic*] for the received transmission power, and requesting adjustment of the transmission power (second parameter) from the microprocessor 30a or 30b stored from the memory 32a or 32b if the transmission power is below or above a predetermined transmission power level in order to increase or decrease the transmission power. ... All the claimed subject matter of claims 3-13 and 15-21 are described ..." (Office Action, pages 4-5, paragraphs 6-1). However, *Goldstein* does not disclose, teach, or suggest a "***negotiating, with a DSL modem, a value for a first performance parameter***" as recited in claim 2.

**i. Independent claim 2**

*Goldstein* teaches that a "first preferred scheme is to calibrate a modem according to the techniques (e.g., Trellis precoding, etc.) it utilizes, and to utilize a look-up table (programmed into memory such as 32) for that modem to identify the desired power level" (col. 5, lines 58-63). "[A] second preferred scheme for finding a desired transmitted signal power level, no look-up

table is required at all. Rather, the signal is decreased in power by algorithms” (col. 8, lines 45-48). “A third scheme ... is to cause the transmitting modem to send signals of different power levels, and to cause the receiving modem to make measurements relating to the error rate for each power level. ... all that is required is that the error rate at each different power level be determined, and that the error rates be compared” (col. 9, lines 28-38). “A fourth scheme ... is to measure the quality of points in a constellation ... Based on the measurement and a decision metric and/or threshold determination, a corrective signal is sent” (col. 9, lines 46-51). Thus, *Goldstein* does not teach or suggest “**negotiating, with a DSL modem, a value for a first performance parameter**” as recited in claim 2, but rather utilizing predetermined values or algorithms. Therefore, Applicants respectfully submit that *Goldstein* does not anticipate independent claim 2 and respectfully request that the rejection of claim 2 be withdrawn.

**ii. Dependent claims 3-13**

Since independent claim 2 is allowable, Applicants respectfully submit that claims 3-13 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 3-13 be withdrawn.

**iii. Dependent claims 5 and 7**

Applicants’ dependent claim 5 provides as follows (emphasis added):

The method of claim 2, wherein the **second performance parameter is transmit data rate**.

Applicants’ dependent claim 7 provides as follows (emphasis added):

The method of claim 6, wherein said **second performance parameter is transmit data rate** and said first performance parameter is transmit power level.

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully submits that rejection of dependent claims 5 and 7 be withdrawn for at least the reason that *Goldstein* fails to disclose, teach, or suggest at least the features recited and emphasized above in claims 5 and 7.

The Office Action alleges that “the signal/noise ration [sic] is the transmission data rate” (Office Action, page 5, paragraph 2). Applicants respectfully disagree. Even it signal/noise ratio is related to transmission data rate, the two are not the same. Furthermore, *Goldstein* teaches “methods and apparatus for optimizing modem performance by decreasing the transmitted power of the modem” (col. 2, lines 12-14), but does not disclose or suggest adjusting transmit data rate. Thus, *Goldstein* does not teach or suggest a “**second performance parameter is transmit data rate**” as recited in claims 5 and 7. Therefore, Applicants respectfully submit that *Goldstein* does not anticipate dependent claims 5 and 7 and respectfully request that the rejection of claims 5 and 7 be withdrawn.

#### iv. Dependent claim 9

Applicants’ dependent claim 9 provides as follows (emphasis added):

The method of claim 2, further comprising the step of:  
***selecting the second performance parameter from a plurality of possible performance parameters.***

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully submits that rejection of dependent claim 9 be withdrawn for at least the reason that *Goldstein* fails to disclose, teach, or suggest at least the features recited and emphasized above in claim 9.

The Office Action alleges that “[a]ll the claimed subject matter of claims 3-13 ... are described ...” (Office Action, page 5, paragraph 1). However, *Goldstein* does not disclose, teach, or suggest “***selecting the second performance parameter from a plurality of possible performance parameters***” as recited in claim 9. *Goldstein* teaches “methods and apparatus for optimizing modem performance by decreasing the transmitted power of the modem” (col. 2, lines 12-14). *Goldstein* does not disclose or suggest adjusting any other parameter. In addition, *Goldstein* does not disclose or suggest selecting a parameter from a plurality of possible parameters. Thus, *Goldstein* does not teach or suggest “***selecting the second performance parameter from a plurality of possible performance parameters***” as

recited in claim 9. Therefore, Applicants respectfully submit that *Goldstein* does not anticipate dependent claim 9 and respectfully request that the rejection of claim 9 be withdrawn.

**v. Dependent claim 12**

Applicants' amended dependent claim 12 provides as follows (emphasis added):

The method of claim 2, wherein the ***received signal comprises a plurality of sub-bands***, each sub-band transmitted at a transmit power level.

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully submits that rejection of dependent claim 12 be withdrawn for at least the reason that *Goldstein* fails to disclose, teach, or suggest at least the features recited and emphasized above in claim 12.

The Office Action alleges that "[a]ll the claimed subject matter of claims 3-13 ... are described ..." (Office Action, page 5, paragraph 1). However, *Goldstein* does not disclose, teach, or suggest a "***received signal comprises a plurality of sub-bands***" as recited in claim 12. *Goldstein* teaches that "flow of data (signals) through a modem is typically as follows. Data being sent via channel 25 from modem 20a ... is received by modem 20a from a source of data, processed (e.g., shaped, and/or precoded, and/or preequalized, etc. and modulated) by microprocessor means 30a which may include a D/A converter, sent to transmitter 34a, attenuated at 40a, and sent via hybrid circuit 41a onto channel 25 as analog data" (col. 4, lines 22-31). *Goldstein* does not disclose or suggest a flow of data or signal comprised of sub-bands. Thus, *Goldstein* does not teach or suggest a "***received signal comprises a plurality of sub-bands***" as recited in claim 9. Therefore, Applicants respectfully submit that *Goldstein* does not anticipate dependent claim 9 and respectfully request that the rejection of claim 9 be withdrawn.

**b. Claims 14-16 and 18-21**

Applicants' amended independent claim 14 provides as follows (emphasis added):

A receiving digital subscriber line (DSL) modem comprising:

means for receiving, from a transmitting DSL modem, a signal exhibiting a first performance parameter;

***means for negotiating, with the transmitting DSL modem, a value for the first performance parameter,***

means for determining a signal-to-noise-ratio for the received signal; and

means for requesting, from the transmitting DSL modem, an adjustment in a second performance parameter associated with the received signal, wherein the second performance parameter is different from the first performance parameter.

Applicants respectfully request that the rejection of independent claim 14 be withdrawn for at least the reason that *Goldstein* fails to disclose, teach, or suggest at least the features recited and emphasized above in claim 14.

The Office Action alleges that "Goldstein discloses modems 1 and 2 in Fig. 1, each modem comprises a transmitter modem 34a or 34b for transmitting a transmission power (first parameter) to a receiving modem 38a or 38b for receiving the transmission power, determining a signal/noise ration [*sic*] for the received transmission power, and requesting adjustment of the transmission power (second parameter) from the microprocessor 30a or 30b stored from the memory 32a or 32b if the transmission power is below or above a predetermined transmission power level in order to increase or decrease the transmission power. ... All the claimed subject matter of claims 3-13 and 15-21 are described ..." (Office Action, pages 4-5, paragraphs 6-1). However, *Goldstein* does not disclose, teach, or suggest a "***means for negotiating, with the transmitting DSL modem, a value for the first performance parameter***" as recited in claim 14.

**i. Independent claim 14**

*Goldstein* teaches that a "first preferred scheme is to calibrate a modem according to the techniques (e.g., Trellis precoding, etc.) it utilizes, and to utilize a look-up table (programmed into memory such as 32) for that modem to identify the desired power level" (col. 5, lines 58-63).



"[A] second preferred scheme for finding a desired transmitted signal power level, no look-up table is required at all. Rather, the signal is decreased in power by algorithms" (col. 8, lines 45-48). "A third scheme ... is to cause the transmitting modem to send signals of different power levels, and to cause the receiving modem to make measurements relating to the error rate for each power level. ... all that is required is that the error rate at each different power level be determined, and that the error rates be compared" (col. 9, lines 28-38). "A fourth scheme ... is to measure the quality of points in a constellation ... Based on the measurement and a decision metric and/or threshold determination, a corrective signal is sent" (col. 9, lines 46-51). Thus, *Goldstein* does not teach or suggest "**means for negotiating, with the transmitting DSL modem, a value for the first performance parameter**" as recited in claim 14, but rather utilizing predetermined values or algorithms. Therefore, Applicants respectfully submit that *Goldstein* does not anticipate independent claim 14 and respectfully request that the rejection of claim 14 be withdrawn.

**ii. Dependent claims 15-16 and 18-21**

Since independent claim 14 is allowable, Applicants respectfully submit that claims 15-16 and 18-21 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 15-16 and 18-21 be withdrawn.

**iii. Dependent claims 16 and 18**

Applicants' amended dependent claim 16 provides as follows (emphasis added):

The receiving DSL modem of claim 14, wherein the **second performance parameter is transmit data rate**.

Applicants' amended dependent claim 18 provides as follows (emphasis added):

The receiving DSL modem of claim 17, wherein said **second performance parameter is transmit data rate** and said first performance parameter is transmit power level.

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully submits that rejection of dependent claims 16 and 18 be withdrawn for at least the reason that *Goldstein* fails to disclose, teach, or suggest at least the features recited and emphasized above in claims 16 and 18.

The Office Action alleges that “the signal/noise ration [sic] is the transmission data rate” (Office Action, page 5, paragraph 2). Applicants respectfully disagree. Even if signal/noise ratio is related to transmission data rate, the two are not the same. Furthermore, *Goldstein* teaches “methods and apparatus for optimizing modem performance by decreasing the transmitted power of the modem” (col. 2, lines 12-14), but does not disclose or suggest adjusting transmit data rate. Thus, *Goldstein* does not teach or suggest a “**second performance parameter is transmit data rate**” as recited in claims 16 and 18. Therefore, Applicants respectfully submit that *Goldstein* does not anticipate dependent claims 16 and 18 and respectfully request that the rejection of claims 16 and 18 be withdrawn.

#### iv. Dependent claim 21

Applicants’ amended dependent claim 21 provides as follows (emphasis added):

The receiving DSL modem of claim 14, further comprising:

means for receiving, from the DSL modem, **a signal comprising a plurality of sub-bands**, each sub-band transmitted at a transmit power level;  
and

**means for determining a signal-to-noise-ratio for a sub-band in the received signal.**

Notwithstanding, and in addition to, the arguments discussed above, Applicant respectfully submits that rejection of dependent claim 21 be withdrawn for at least the reason that *Goldstein* fails to disclose, teach, or suggest at least the features recited and emphasized above in claim 21.

The Office Action alleges that “[a]ll the claimed subject matter of claims ... 15-21 are described ...” (Office Action, page 5, paragraph 1). However, *Goldstein* does not disclose, teach, or suggest “**a signal comprising a plurality of sub-bands**” as recited in claim 21.

*Goldstein* teaches that “flow of data (signals) through a modem is typically as follows. Data being sent via channel 25 from modem 20a ... is received by modem 20a from a source of data, processed (e.g., shaped, and/or precoded, and/or preequalized, etc. and modulated) by microprocessor means 30a which may include a D/A converter, sent to transmitter 34a, attenuated at 40a, and sent via hybrid circuit 41a onto channel 25 as analog data” (col. 4, lines 22-31). *Goldstein* does not disclose or suggest a flow of data or signal comprised of sub-bands. Thus, *Goldstein* does not teach or suggest “**a signal comprising a plurality of sub-bands**” as recited in claim 21.

In addition, *Goldstein* does not disclose, teach, or suggest “**means for determining a signal-to-noise-ratio for a sub-band in the received signal**” as recited in claim 21. *Goldstein* teaches that “the receiving modem (e.g., modem 20b receiving data 1 from modem 20a) measures the signal/noise ratio and the IMD relating to signals (data 1) being transmitted over the channel (25)” (col. 5, lines 35-38). As identified above, *Goldstein* does not disclose or suggest a flow of data or signal comprised of sub-bands. Nor does *Goldstein* disclose or suggest determining a signal-to-noise-ratio for a signal sub-band. Thus, *Goldstein* does not teach or suggest “**means for determining a signal-to-noise-ratio for a sub-band in the received signal**” as recited in claim 21.

Therefore, Applicants respectfully submit that *Goldstein* does not anticipate dependent claim 21. Thus, Applicants respectfully request that the rejection of claim 21 be withdrawn.

### **c. Summary**

Due to the shortcomings of the *Goldstein* reference discussed above, Applicant respectfully asserts that *Goldstein* does not anticipate Applicant's claims. Therefore, Applicant respectfully requests that the rejection of these claims be withdrawn.

## 6. Newly Added Claims

Claims 22-27 have been added into the application through this response. Applicants submit that new independent claim 22 is allowable over the cited references, for at least the reason that the references do not teach or suggest “means for negotiating, with a DSL modem, a criteria for a first performance parameter” as recited in claim 22. In addition, Applicants submit that new claims 23-27 are allowable over the cited references, for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicants respectfully request the Examiner to enter and allow the above new claims.

## **CONCLUSION**

Applicants respectfully request that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 2-16 and 18-26 be allowed to issue. If the Examiner has any questions or comments regarding Applicant’s response, the Examiner is encouraged to telephone Applicants’ undersigned counsel.

Respectfully submitted,

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